

Work Order ID 81943

81943

Page 1

March-21-12 9:52:43 AM

Item ID: D350-636-018

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 21/03/2012 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 04/04/2012 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/03/21 Tooling:

Date:

Run Start *NR1*

QC:

Date: SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D4168

A

IIN-D350-636

I

100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy blue file and type labels per PPP D350-636-018 CHG 002

5.7/10/26
 or chg 3 per
 ECN 12-542
 (depends on 134154-041
 Rev B or C?)
 MLJ 12-6-25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Run Start ***NR1***

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Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110		0.00							
110	Skidtubes								
Skidtubes	Memo	0.00							
Skidtubes	1- Pick D2600-3 Bent								
	2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D2750								
	3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr.								
	4- Locate DT8329 off of blade fitting bolt holes and drill pilot holes for blade fitting								
	5- Drill fwd step holes using DT9616 detail AA. Ensure proper positioning.								
	6- Drill pilot holes using drill Jig DT8150 & DT8864A for first side only DT8864B for second side section BE-BE and BC-BC								
	7- Clecko DT8864B on second side of tube and drill pilot holes for section BE-BE and BC-BC ***SECOND SIDE***								
	8-Drill pilot holes for wearplates as per Dwg D4168 using DT9678. Locating from 66.54" holes.								
	9-Open up holes of Detail A to 0.297" (total of 2 holes per side) +.201" holes Detail AA.								
	10-Weld D2744 Cap as per Dwg D4168 and QSI 004.Fill grooves in bend left from bending as per QSI 004								
	A/R Aluminum Rod batch: <u>m120854</u>								

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Required Date: 04/04/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Run

Start

NR1

Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop

NR2

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

11-Grind welds flush as per Dwg D4168

81 12/05/11

120

QC10- Inspect visual per QS1004- ground welds

0.00

120

QC

Memo

0.00

Quality Control

130

QC5- Inspect part completeness to step on W/O

0.00

130

QC

Memo

0.00

Quality Control

81 12/06/14

81 12/06/14

W/O:		WORK ORDER CHANGES					
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Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

140

Chemical Conversion Coat per QSI005 4.1

0.00

140

HandFinish

Memo

0.00

Hand Finishing

1 NG 12.6.5

150

~~QC7~~ QC3-Inspect Part Finish

0.00

150

QC

Memo

0.00

Quality Control

① S40 12.06.05

W/O: 81943		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
12-06-05	150	Change Qc3 to Qc 7	PA				

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Cust Item ID:

Required Date: 04/04/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

0.00

160

Skidtubes

0.00

Skidtubes

Memo

1-Open up holes of Detail AB and ground handling to 0.625" (total of 8 holes per side) as per dwg D4168.

2-Open up holes of wearplate holes to 0.375" section CK-CK (total of 4 holes per side) 0.3125" holes section BC-BC (4 per side) as per dwg D4168.

3- Open float hole to 0.500" (4 per side)

4-Chamfer holes dwg D4168 (welding instructions on sheet 11)

5-Deburr and blow out all chips from inside of tube

6- Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI 015

A/R Sikaflex-291 batch: M121409
exp. date: 12-4-128- Weld spacers as per dwg D4168 & QSI004
(welding instructions on sheet 11)A/R Aluminum Rod batch: NEW1 m120164/m103953

9- Grind welds flush as per Dwg D4168

10-Spot face ground handling holes section (total of 4 places per side) as per dwg D4168

CF 12-6.5

BE 12-06-13

BE 12-06-13

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Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

11- C'bore section CK-CK

12- Deburr holes

*7 BE 12/06/13****** FOR DELUXE SKIDTUBE IF APPLICABLE DRILL TOW RING
HOLE IN TUBE *****

170

QC10- Inspect visual per QSI004- ground welds 0.00

170

QC

Memo

0.00

Quality Control

180

QC5- Inspect part completeness to step on W/O 0.00

180

QC

Memo

0.00

Quality Control

*8/17/06/15**8/17/06/15*

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Run Start *NR1*

QC: Date: SPC (Y/N): Date:

Stop *NR2*

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190 Pressure Wash per QSI005 4.3

0.00

190

HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

1 26 12-6-18

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum 0.00

200

Powdercoat

Powder Coating

Memo

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

10:20 0.00
3200F
10:50

IX 12/06/18

210

QC3- Inspect Part Finish 0.00

210

QC

Quality Control

Memo

Inspect for foreign object per QSI 024

13M 4 11/06/20

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Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

220

0.00

220

HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1- Install inserts as per Dwg D2750

1.3.11 4 11/06/20

230

0.00

230

HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1-Inspect for Foreign Objects

2-Spray inside of tube with "LPS-3" batch: 10/1

3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D2750

SIKA FLEX 241

BATCH: 11121409

EXP DATE: 13/07

4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube

A/R 55-o'ring lube batch: 1110349

5-Coat all exposed fasteners with "LPS Procyon" batch: 1114896

1.2.17 4 11/06/20

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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1

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Required Date: 04/04/2012 Req'd Qty: 1.00

1

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Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240	QC5- Inspect part completeness to step on W/O	0.00							
240									
QC	Memo	0.00							
Quality Control									
250	Pick Kit	0.00							
250									
Packaging	Memo	0.00							
Packaging									
260	QC4- 100% Inspect kits for completeness	0.00							
260									
QC	Memo	0.00							
Quality Control	*****ensure antiseize is on AN8C21A bolts*****								

S
7/6/12

10

12-06-22
22-06-12

1 R/4

P/4/25 *U* *Q*

S/7/6/12

670

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270		0.00							
270	Packaging								
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPPD350-636-018								
	Location:								
	PPP rev: <u>B</u>								
280		0.00							
280	QC21- Final Inspection - Work Order Release								
QC	Memo	0.00							
Quality Control									

K

12-6-26

12/6/27

mf
12-06-26

W/O:		WORK ORDER CHANGES					
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Picklist Print

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Page 1

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Parent Item: D350-636-018

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Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP rev:A 10.09.28 new issue DD verf:EC
11.04.14 ecn11-553 DD verf:EC
NCR 11-906 DD verf:EC

IPP Rev:B
IPP Rev:C 11.10.18 as per

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D3490-1		Manufactured	No			160	Each	33.0000	4	4			
---------	--	--------------	----	--	--	-----	------	---------	---	---	--	--	--

D3490-1

Cross Bolt Spacer

**

Location

Loc Qty

Loc Code

LG001

33

62450

2

74875

4

77042

3

78793

24

AN3C34A

Purchased

No

230

Each

50.0000

1

1

AN3C34A

BOLT

**

Location

Loc Qty

Loc Code

ST353

50

116075

30

117514

20

BE12/06/13
B 83269 * 4

12/06/12

Y1

W/O:		WORK ORDER CHANGES					
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Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

AN3C36A

Purchased

No

230

Each

154.0000

4

4

AN3C36A

BOLT

**

HH 12/06/12

Location

Loc Qty

Loc Code

FG

4

101261

4

ST353

150

116590

0

119083

2

119324

53

120641

40

121013

55

YJ

AN3C37A

Purchased

No

230

Each

207.0000

1

1

AN3C37A

BOLT

**

Handwritten signature and initials.

Location

Loc Qty

Loc Code

ST354

207

116874

11

117010

2

120422

44

120731

50

121068

100

11/2/068

AN3C42A

Purchased

No

230

Each

40.0000

1

1

AN3C42A

BOLT

**

11/2/103

Handwritten signature and initials.

Location

Loc Qty

Loc Code

ST354

40

106176

1

119673

14

120464

25

W/O:		WORK ORDER CHANGES					
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Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

D3488-042

Manufactured No

230

Each

18.0000

1

1

D3488-042

Blade Fitting Assembly, RH

**

YU 12/06/12
8833

Location

Loc Qty

Loc Code

FP002

18

62003

1

75068

9

77015

8

1385734

XU

D3490-5

Manufactured No

230

Each

45.0000

4

4

D3490-5

Cross Bolt Spacer

**

BE 12/06/13
B83373 *4

Location

Loc Qty

Loc Code

LG

25

78958

25

LG001

20

59230

20

D3492-1

Manufactured No

230

Each

114.0000

8

8

D3492-1

Plug

**

YU 12/06/12

Location

Loc Qty

Loc Code

FP002

114

69531

8

74444

2

76235

4

77037

100

1383259

V8

D3492-5

Manufactured No

230

Each

32.0000

8

8

D3492-5

Plug

**

YU 12/06/12

Location

Loc Qty

Loc Code

FP002

32

77044

32

1383100

X8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-21-12 9:52:47 AM

Work Order ID: 81943

81943

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

D3873-1

Manufactured No

230 Each

151.0000

7 7

D3873-1

Bushing

**

M 11/06/12

Location

Loc Qty

Loc Code

ST057

105

B76791

X 7

79561

105

ST067

46

64760

1

68247

4

73829

19

73830

2

79560

20

D4154-041

Manufactured No

230 Each

1.0000

1 1

D4154-041

Wearplate Assembly

**

M 11/06/12

Location

Loc Qty

Loc Code

FG

1

B83219

X 1

77007

1

D4170-1

Manufactured No

230 Each

9.0000

4 4

D4170-1

Bushing

**

B82043 X4
21/06/13

Location

Loc Qty

Loc Code

LG001

9

71844

5

76677

4

D4171-1

Manufactured No

230 Each

7.0000

1 1

D4171-1

Bushing

B8238 X4

M 11/06/12

Location

Loc Qty

Loc Code

ST135

7

77008

7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-21-12 9:52:47 AM

Work Order ID: 81943

81943

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

MS21043-3

Purchased

No

230

Each

793.0000

5

5

MS21043-3

Nut

**

ML 12/06/22

Location

Loc Qty

Loc Code

FG

72

103691

72

GA

304

120693

304

ST301

417

118077

2

118614

365

118686

30

119758

20

x5

NAS1149C0363R

Purchased

No

230

Each

3,373.000

9

9

NAS1149C0363R

Washer

**

ML 12/06/22

Location

Loc Qty

Loc Code

ST297

3373

114742

3373

x9

NAS1515H3L

Purchased

No

230

Each

176.0000

4

4

***NAS1515H3L ***

WASHER

**

ML 12/06/22

Location

Loc Qty

Loc Code

FG

40

102472

40

ST277

136

118686

3

119438

1

120072

36

120360

96

B121556

x4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-21-12 9:52:48 AM

Work Order ID: 81943

81943

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

NAS1611-005

Purchased

No

230

Each

204.0000

8

8

NAS1611-005

O-RING

**

Handwritten: 21/06/20

Location

Loc Qty

Loc Code

FP001

204

106099

31

114220

105

119438

68

Handwritten: 28

NAS1611-010

Purchased

No

230

Each

193.0000

8

8

NAS1611-010

O-RING

**

Handwritten: 21/06/20

Location

Loc Qty

Loc Code

FP

50

110915

0

120770

50

FP001

143

110915

14

117460

8

118077

1

118612

3

119438

47

120308

20

120986

50

Handwritten: M1121584

Handwritten: M1121723

Handwritten: 25

Handwritten: 23

NAS1149D0863J

Purchased

No

250

Each

227.0000

2

2

NAS1149D0863.J

WASHER

**

Handwritten: 21/4/20

Location

Loc Qty

Loc Code

ST298

227

118078

36

119307

91

120308

100

Handwritten: 120308

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 7

March-21-12 9:52:48 AM

Work Order ID: 81943

81943

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

D2744

Manufactured No

110

Each

56.0000

1

1

D2744

Cap

**

BE 12/05/31
883412 *1 ✓

Location

Loc Qty

Loc Code

LG002

56

62715

1

70881

9

71861

4

78900

42

D2600-3-BENT

Manufactured No

110

Each

19.0000

1

1

D2600-3-BENT

Extrusion Bent

**

BE 12/05/31
883442 *1 ✓

Location

Loc Qty

Loc Code

LG

19

66875

7

73253

1

75021

1

75022

1

75023

1

81330

8

D2743

Manufactured No

160

Each

216.0000

8

8

D2743

Crossbolt Spacer

**

BE 12/06/3
883262 *8

Location

Loc Qty

Loc Code

LG001

216

67766

4

68251

3

73403

64

74445

1

78603

44

79517

100

March-21-12 9:52:48 AM

Shop Packet Print

Page 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 8

March-21-12 9:52:48 AM

Work Order ID: 81943

81943

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

D2739 Manufactured No

160 Each 6.0000 1 1

D2739

350 I Beam

**

① CF 12.6.5

B82447

Location Loc Qty Loc Code

LG	6	
72155	1	
80083	5	

ALS4-1032-225 Purchased No

230 Each 1,018.000 4 4

ALS4-1032-225

Insert

**

u 1206120

Location Loc Qty Loc Code

ST281	985	
108696	146	
110768	62	
118386	55	
118966	68	
120671	654	
ST282	33	
120410	20	
120451	13	

AN8C35A Purchased No

230 Each 63.0000 1 1

AN8C35A

BOLT

**

u 1206121

Location Loc Qty Loc Code

FP002	62	
115960	1	
117834	9	
118286	52	
ST346	1	
114442	0	
115188	0	
115960	1	

March-21-12 9:52:48 AM

Shop Packet Print

Page 8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 9

March-21-12 9:52:48 AM

Work Order ID: 81943

81943

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

AN6C44A

Purchased

No

230

Each

99.0000

4

4

AN6C44A

BOLT

**

ll

12/06/22

Location

Loc Qty

Loc Code

FG

2

1121440

xl

103964

2

ST343

97

120095

4

120143

25

120465

27

120641

21

121013

20

MS21083C8

Purchased

No

230

Each

80.0000

1

1

MS21083C8

NUT

**

ll

12/06/22

Location

Loc Qty

Loc Code

FP002

1

115884

1

ST303

13

115884

0

118077

1

1121185

xl

119309

2

119436

8

119638

2

ST304

66

120142

16

120731

25

121011

25

March-21-12 9:52:49 AM

Shop Packet Print

Page 9

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-21-12 9:52:49 AM

Work Order ID: 81943

81943

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

D3631-1 Manufactured No

230 Each 199.0000 8 8

D3631-1

**

Washer

21/06/20

Location

Loc Qty

Loc Code

ST072

199

383582

Y8

68062

2

75548

197

AN960C10L NAS1149C0332 Purchased No

230 Each 0.0000 4 4

***AN960C10L ***

washer

1122068

**

(H)

21/06/22

D2745 Manufactured No

230 Each 120.0000 8 8

D2745

**

21/06/20

Bushing

Location

Loc Qty

Loc Code

FP

100

383260

Y8

79518

100

FP001

20

69529

1

76142

1

78597

18

NAS1149C0832R Purchased No

230 Each 302.0000 1 1

NAS1149C0832R

WASHER

**

21/06/22

Location

Loc Qty

Loc Code

ST297

302

114915

302

V1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-21-12 9:52:49 AM

Work Order ID: 81943

81943

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

AN3C6A

Purchased

No

230

Each

575.0000

4

4

AN3C6A

BOLT

**

21 06 12

Location

Loc Qty

Loc Code

FP001

1

11121682

X-1

111982

1

ST351

574

111982

2

116419

23

116549

2

116704

12

117619

10

117688

1

117872

5

118422

13

119449

21

120423

85

120693

400

MS21043-6

Purchased

No

230

Each

801.0000

4

4

MS21043-6

NUT

**

21 06 12

Location

Loc Qty

Loc Code

FG

20

103693

20

ST301

781

112314

75

117887

6

118384

200

120308

500

X-1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 12

March-21-12 9:52:49 AM

Work Order ID: 81943

81943

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

D3493-1

Manufactured No

250 Each

62.0000

2

2

**

82023

D3493-1

Washer

Location

Loc Qty

Loc Code

ST050

62

70697

2

77573

20

78835

40

MS21083C8

Purchased No

250 Each

80.0000

2

2

**

~~121348~~

12/4/250

MS21083C8

NUT

Location

Loc Qty

Loc Code

FP002

1

115884

1

ST303

13

115884

0

118077

1

119309

2

119436

8

119638

2

ST304

66

120142

16

120731

25

121011

25

121349

SP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-21-12 9:52:49 AM

Work Order ID: 81943

81943

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

AN8C21A

Purchased

No

250

Each

67.0000

2

2

**

AN8C21A

BOLT

Location

Loc Qty

Loc Code

ST343

67

118758

5

120094

38

120872

4

121067

20

D2741

Manufactured

No

250

Each

33.0000

1

1

**

D2741

Blade, 350 Skidtube

Location

Loc Qty

Loc Code

ST

-10

ST466

43

71856

1

76984

32

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D4168-041	350 SKIDTUBE ASSEMBLY, LH
	X			D4168-042	350 SKIDTUBE ASSEMBLY, RH
		X		D4168-043	350 SKIDTUBE ASSEMBLY, LH
			X	D4168-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D3488-041	BLADE FITTING, LH
	1			D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
8	8	8	8	D3631-1	WASHER
7	7	7	7	D3873-1	BUSHING
1	1	1	1	D4154-041	WEARPLATE ASSEMBLY
1				D4168-1	SKIDTUBE WELDMENT, LH
	1			D4168-2	SKIDTUBE WELDMENT, RH
		1		D4168-3	SKIDTUBE WELDMENT, LH
			1	D4168-4	SKIDTUBE WELDMENT, RH
4	4	4	4	D4170-1	SPACER
1	1	1	1	D4171-1	BUSHING
4	4	4	4	ALS4-1032-225	INSERT
4	4	4	4	AN3C6A	BOLT
1	1	1	1	AN3C34A	BOLT
4	4	4	4	AN3C36A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
9	9	9	9	AN960C10	WASHER (OR NAS1149C0363R)
4	4	4	4	AN960C10L	WASHER (OR NAS1149C0332R)
1	1	1	1	AN960C816L	WASHER (OR NAS1149C0832R)
5	5	5	5	MS21043-3	NUT
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- MATERIAL: MAKE D4168-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- FINISH:
CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED
- BREAK SHARP EDGES: N/A
- IDENTIFICATION: N/A
- WEIGHT: D4168-041/-042/-043/-044 = 32.3 LBS
- WELD PER DART QSI 004
- FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
POWDER COATING WITH MEK DEGREASER.
- SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 81943 MCL
12/03/21

RELEASED
2010-09-15

A NEW ISSUE		SC	10.08.09
REV.	DESCRIPTION	BY	DATE
DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 1 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SURVEILLANCE ON THE COPYRIGHTED DESIGN THAT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

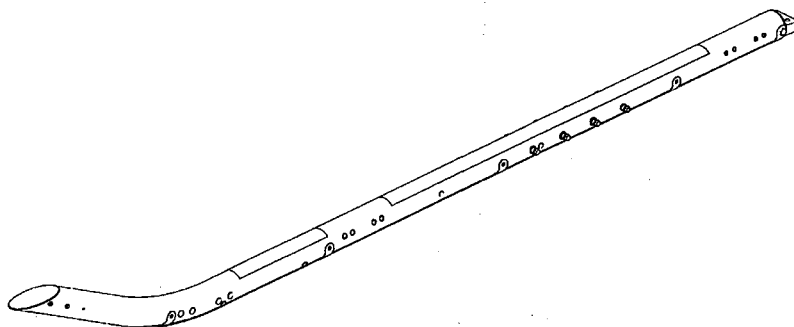
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

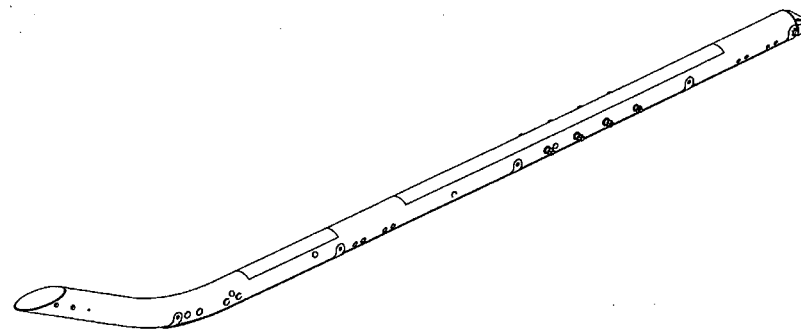
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

81943



D4168-041 350 SKIDTUBE ASSEMBLY, LH



D4168-042 350 SKIDTUBE ASSEMBLY, RH

RELEASED
2010-09-15
JW

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	D4168	SHEET 2 OF 11
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	<small>COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

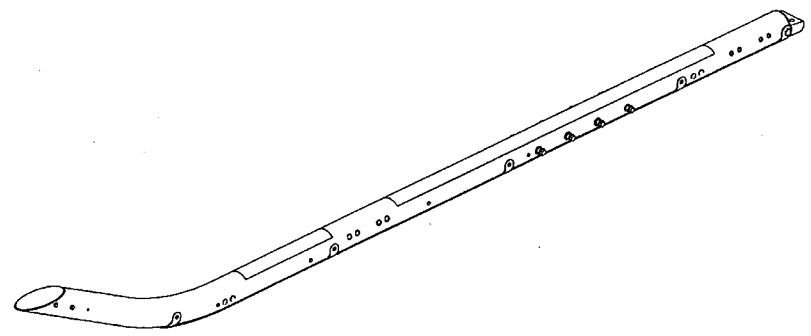
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

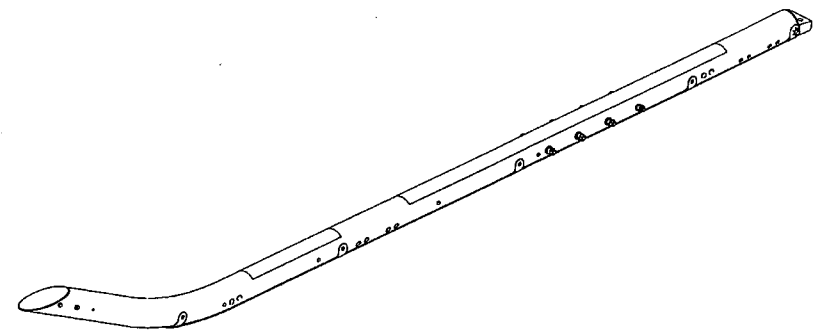
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

81943



D4168-043 350 SKIDTUBE ASSEMBLY, LH



D4168-044 350 SKIDTUBE ASSEMBLY, RH

RELEASED
2010-09-15

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 3 OF 11
APPROVED		TITLE	SCALE
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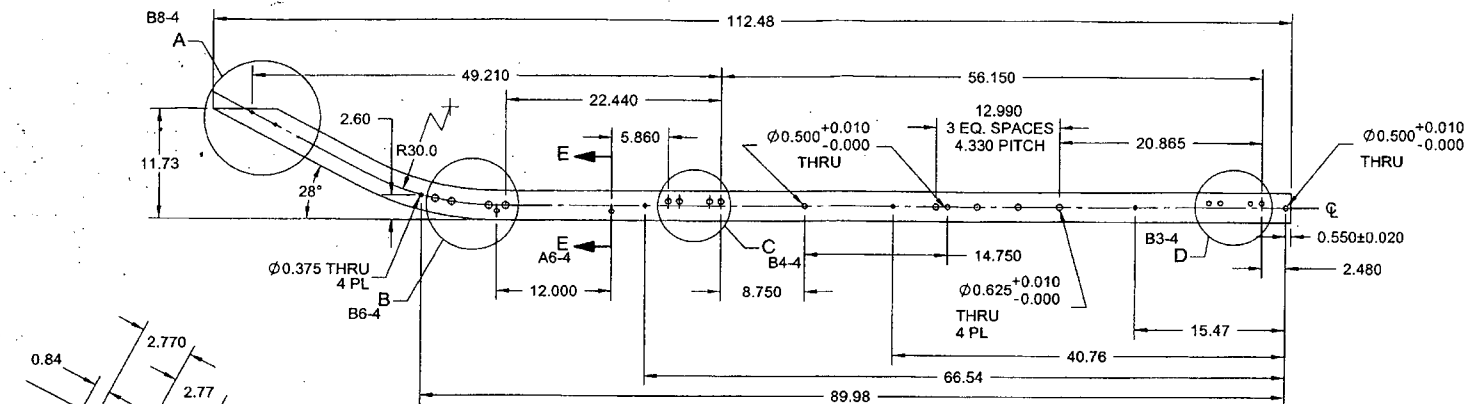
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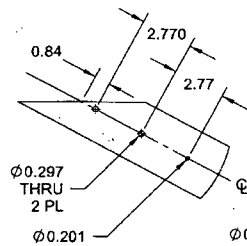
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

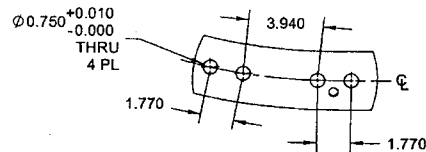
81943



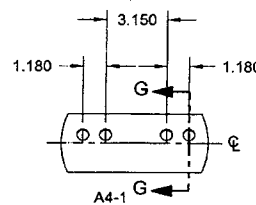
D4168-1 LH SKIDTUBE



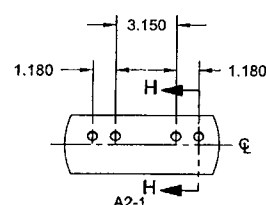
DETAIL A
SCALE 2X



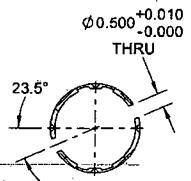
DETAIL B
SCALE 2X



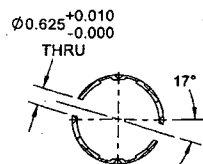
DETAIL C
SCALE 2X



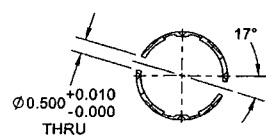
DETAIL D
SCALE 2X



SECTION E-E
SCALE 3X, 2 PL



SECTION G-G
SCALE 3X, 4 PL



SECTION H-H
SCALE 3X, 4 PL

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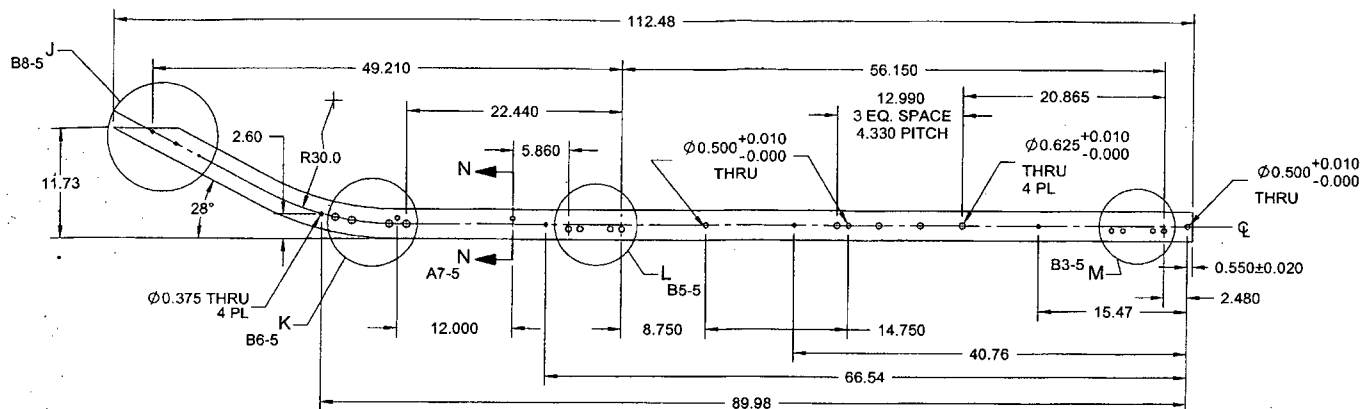
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

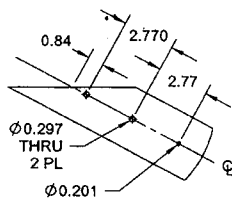
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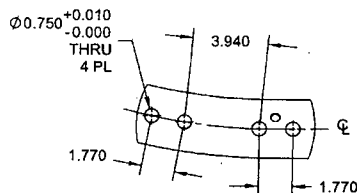
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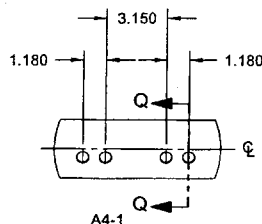
D4168-2 RH SKIDTUBE



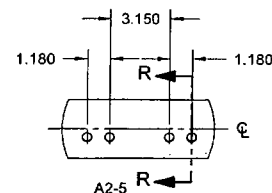
DETAIL J
SCALE 2X



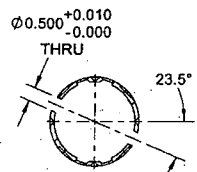
DETAIL K
SCALE 2X



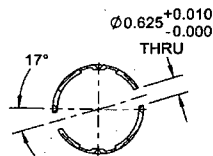
DETAIL L
SCALE 2X



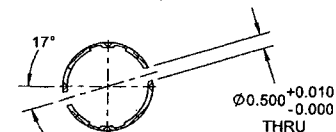
DETAIL M
SCALE 2X



SECTION N-N
SCALE 3X, 2 PL



SECTION Q-Q
SCALE 3X, 4 PL



SECTION R-R
SCALE 3X, 4 PL

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED		DRAWING NO. D4168	REV. A
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

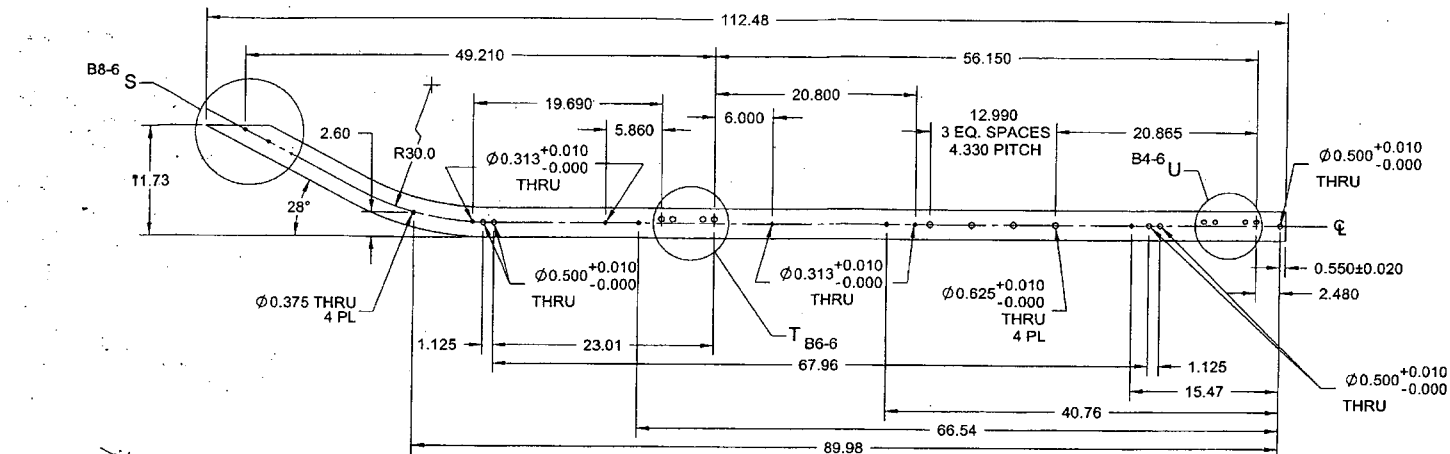
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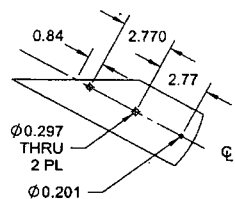
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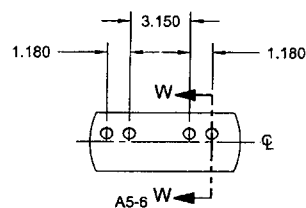
81943



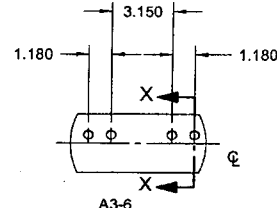
D4168-3 LH SKIDTUBE



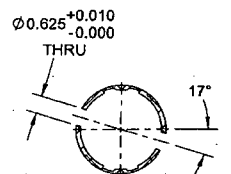
DETAIL S
SCALE 2X



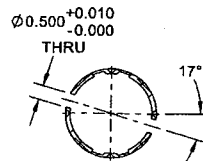
DETAIL T
SCALE 2X



DETAIL U
SCALE 2X



SECTION W-W
SCALE 3X, 4 PL



SECTION X-X
SCALE 3X, 4 PL

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MFG. APPR.		D4168	SHEET 6 OF 11
APPROVED		TITLE	SCALE
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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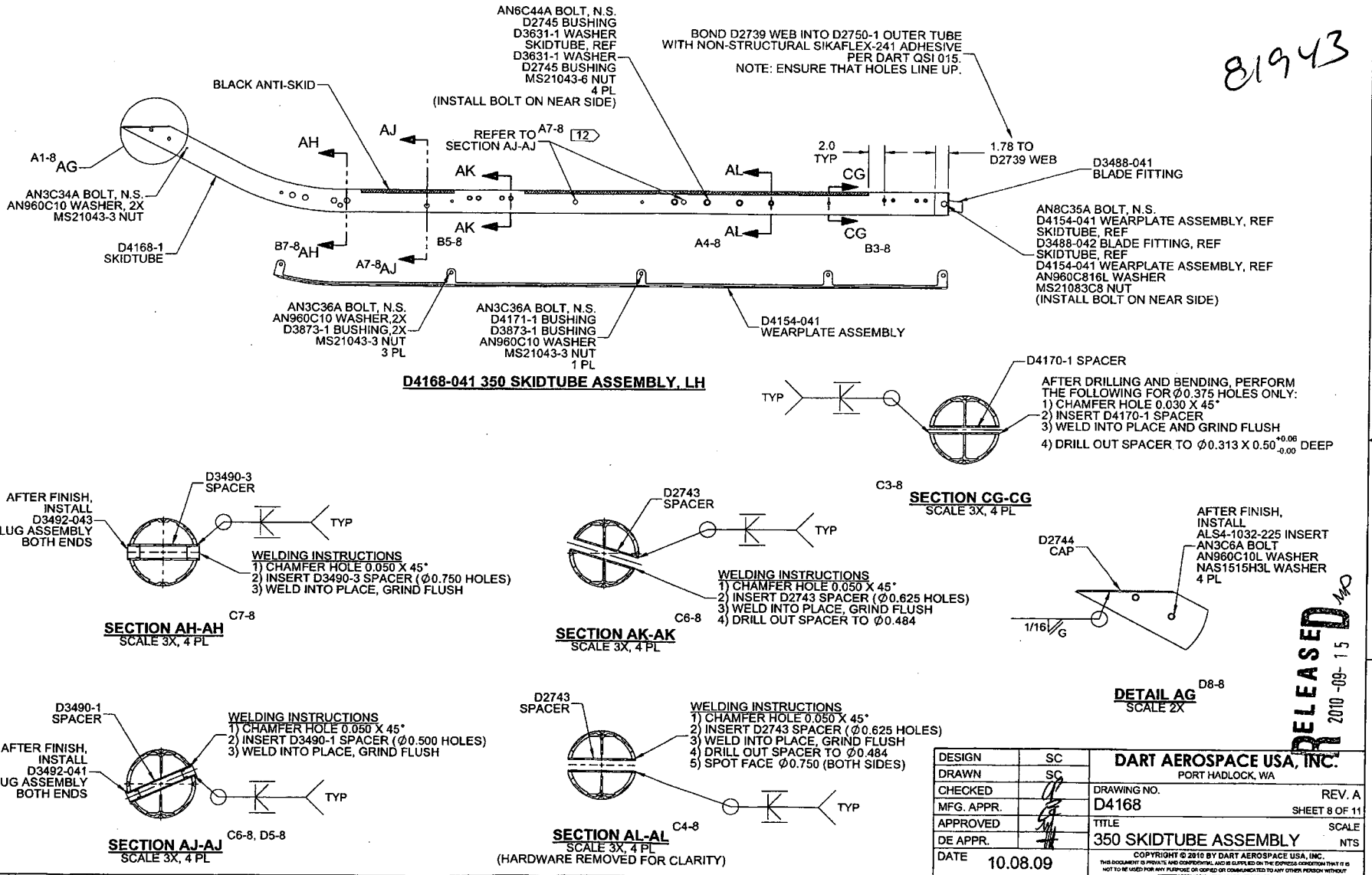
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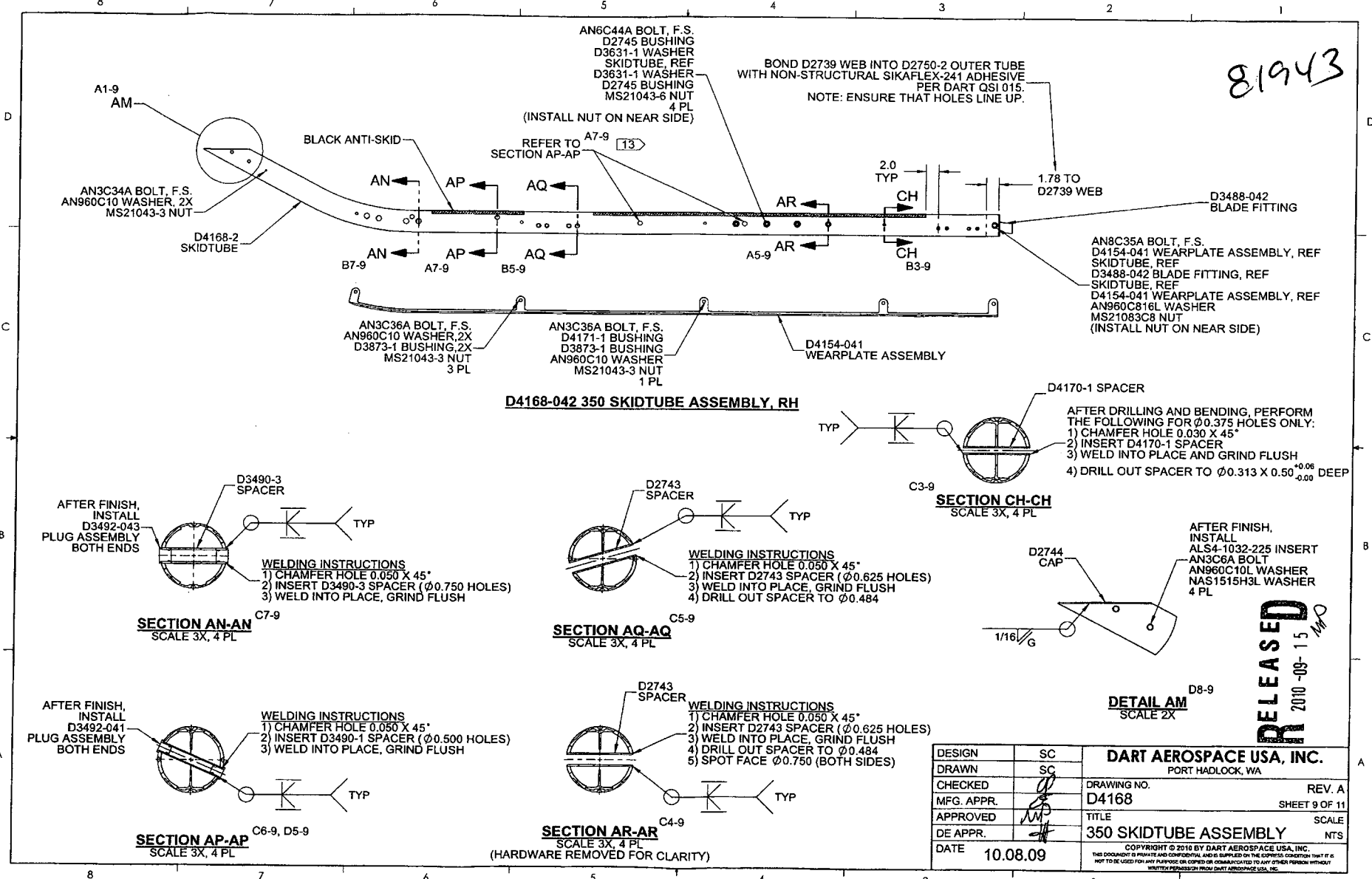
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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W/O:		WORK ORDER CHANGES					
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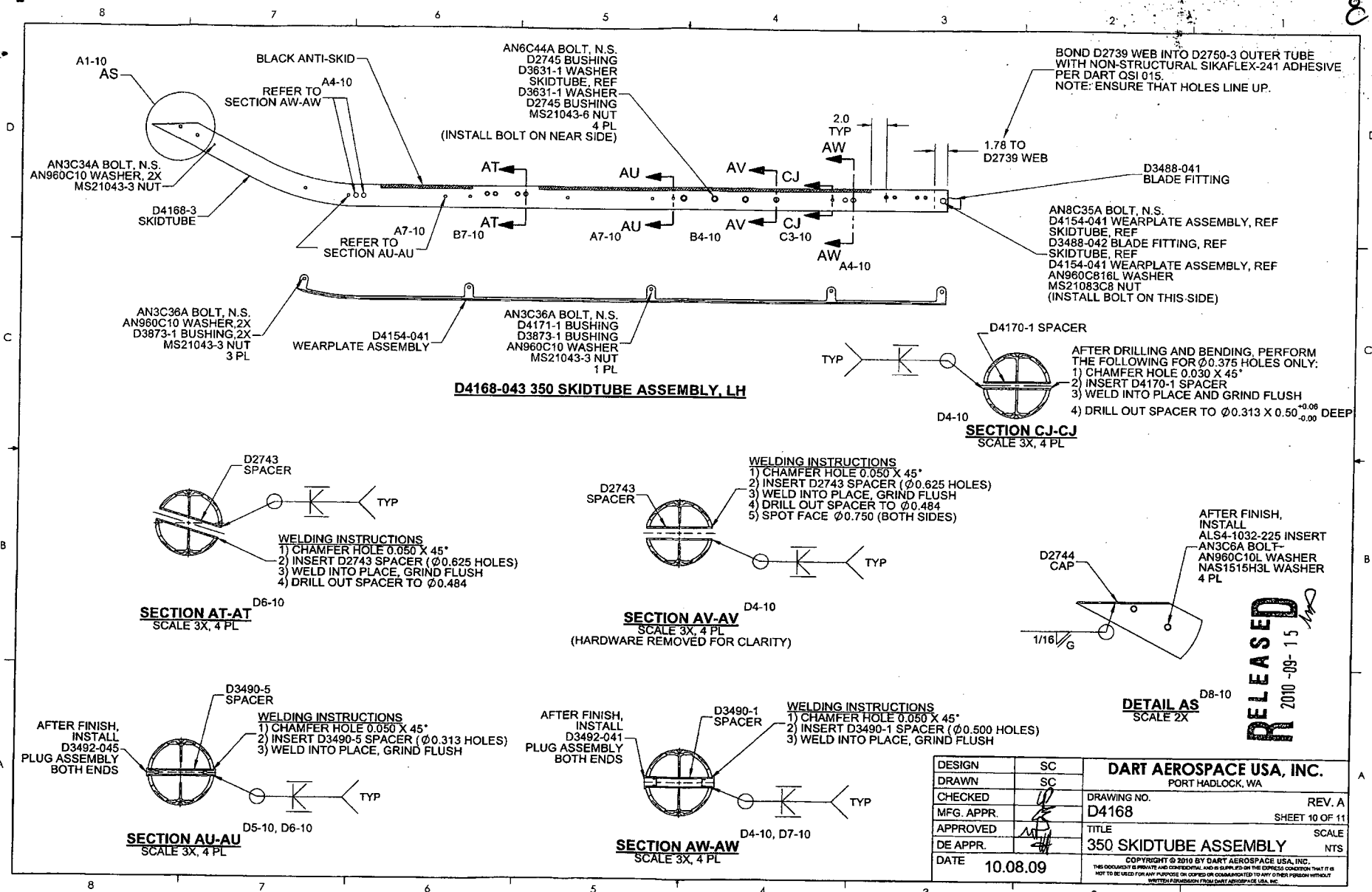
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NOTE: Date & initial all entries

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1943

BLACK ANTI-SKID

AN6C44A BOLT, F.S.
D2745 BUSHING
D3631-1 WASHER
SKIDTUBE, REF
D3631-1 WASHER
D2745 BUSHING
MS21043-6 NUT
4 PL
(INSTALL NUT ON NEAR SIDE)

BOND D2739 WEB INTO D2750-4 OUTER TUBE
WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE
PER DART QSI 015
NOTE: ENSURE THAT HOLES LINE UP.

2.0 TYP
BE

1.78 TO
D2739 WEB

D3488-042
BLADE FITTING

AN8C35A BOLT, F.S.
D4154-041 WEARPLATE ASSEMBLY, REF
SKIDTUBE, REF
D3488-042 BLADE FITTING, REF
SKIDTUBE, REF
D4154-041 WEARPLATE ASSEMBLY, REF
AN960C816L WASHER
MS21083C8 NUT
(INSTALL NUT ON NEAR SIDE)

AN3C34A BOLT, N.S.
AN960C10 WASHER, 2X
MS21043-3 NUT

D4168-4
SKIDTUBE

REFER TO
SECTION BE-BE

REFER TO
SECTION BC-BC

AN3C36A BOLT, F.S.
AN960C10 WASHER, 2X
D3873-1 BUSHING, 2X
MS21043-3 NUT
3 PL

D4154-041
WEARPLATE ASSEMBLY

AN3C36A BOLT, F.S.
D4171-1 BUSHING
D3873-1 BUSHING
AN960C10 WASHER
MS21043-3 NUT
1 PL

D4168-044 350 SKIDTUBE ASSEMBLY, RH

D2743
SPACER

TYP

WELDING INSTRUCTIONS
1) CHAMFER HOLE 0.050 X 45°
2) INSERT D2743 SPACER (Ø0.625 HOLES)
3) WELD INTO PLACE, GRIND FLUSH
4) DRILL OUT SPACER TO Ø0.484

D6-11

SECTION BB-BB
SCALE 3X, 4 PL

D2743
SPACER

TYP

WELDING INSTRUCTIONS
1) CHAMFER HOLE 0.050 X 45°
2) INSERT D2743 SPACER (Ø0.625 HOLES)
3) WELD INTO PLACE, GRIND FLUSH
4) DRILL OUT SPACER TO Ø0.484

D4-11

SECTION BD-BD
SCALE 3X, 4 PL
(HARDWARE REMOVED FOR CLARITY)

D4-11

SECTION CK-CK
SCALE 3X, 4 PL

D4170-1 SPACER

AFTER DRILLING AND BENDING,
PERFORM THE FOLLOWING
FOR Ø0.375 HOLES ONLY:
1) CHAMFER HOLE 0.030 X 45°
2) INSERT D4170-1 SPACER
3) WELD INTO PLACE AND
GRIND FLUSH
4) DRILL OUT SPACER TO
Ø0.313 X 0.50^{+0.05}_{-0.00} DEEP

D4-11

SECTION D4-11
SCALE 3X, 4 PL

D2744
CAP

1/16" G

AFTER FINISH,
INSTALL
ALS4-1032-225 INSERT
AN3C6A BOLT
AN960C10L WASHER
NAS1515H3L WASHER
4 PL

D8-11

DETAIL BA
SCALE 2X

AFTER FINISH,
INSTALL
D3492-045
PLUG ASSEMBLY
BOTH ENDS

D3490-5
SPACER

WELDING INSTRUCTIONS
1) CHAMFER HOLE 0.050 X 45°
2) INSERT D3490-5 SPACER (Ø0.313 HOLES)
3) WELD INTO PLACE, GRIND FLUSH

D5-11, C6-11

SECTION BC-BC
SCALE 3X, 4 PL

AFTER FINISH,
INSTALL
D3492-041
PLUG ASSEMBLY
BOTH ENDS

D3490-1
SPACER

WELDING INSTRUCTIONS
1) CHAMFER HOLE 0.050 X 45°
2) INSERT D3490-1 SPACER (Ø0.500 HOLES)
3) WELD INTO PLACE, GRIND FLUSH

D4-11, D7-11

SECTION BE-BE
SCALE 3X, 4 PL

DESIGN SC
DRAWN SC
CHECKED SC
MFG. APPR. SC
APPROVED SC
DE APPR. SC
DATE 10.08.09

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DART AEROSPACE USA, INC.
PORT HADLOCK, WA

DRAWING NO.
D4168

TITLE
350 SKIDTUBE ASSEMBLY

REV. A
SHEET 11 OF 11
SCALE
NTS

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2010-09-15

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			Initial Chief Eng	Action Description / Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 294

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barday Elliott
Job number: 83800
Part number: A350-636-012
Description: Skid tube
Welding Process: Tig[☒] Mig[☐]
Base material: Alum
Current: AC[☒] DC[☐]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[☐]
Penetration: pass[☒] fail[☐]

UNACCEPTABLE

Cracks: pass[☒] fail[☐]
Undercut: pass[☒] fail[☐]
Pin holes: pass[☒] fail[☐]
Overlap (cold lap): pass[☒] fail[☐]
Porosity (surface): pass[☒] fail[☐]
Coloration: pass[☒] fail[☐]

Qualifier David Arenal Date of Test Coupon 12.05.09

Welder Barday Elliott Date of Test Coupon 12.05.09

The above named individual is qualified in accordance with AWS D17.1.2001 to weld